

Claims

1. A wound retractor system comprising:-
 - 5 a retractor having a retracting member for insertion into a wound opening; and
 - an insertion tool for inserting or assisting the insertion of or deployment of the retracting member in a wound opening.
- 10 2. A system as claimed in claim 1 wherein the insertion tool has a receiver for mounting the retractor to the insertion device.
- 15 3. A system as claimed in claim 2 wherein the retractor comprises a distal portion and the receiver is adapted for mounting the distal portion to the insertion tool.
- 20 4. A system as claimed in claim 3 wherein the receiver comprises a groove for receiving the distal portion of the retractor.
5. A system as claimed in claim 3 or 4 wherein the distal portion comprises a distal ring member mounted to the retracting member.
- 25 6. A system as claimed in claim 5 wherein the distal ring member is of flexible material.
7. A system as claimed in claim 5 or 6 wherein the ring member is of elastomeric material.
- 30 8. A system as claimed in any preceding claim wherein the insertion tool comprises an elongate member having a distal end.

9. A system as claimed in claim 8 wherein the distal end of the insertion tool has a cutting blade for forming an incision.
- 5 10. A system as claimed in claim 8 or 9 wherein the retractor comprises a proximal ring member and the insertion tool has a pusher to push the proximal member towards a distal member to shorten the axial extent between the proximal and distal ring members.
10. 11. A system as claimed in claim 10 wherein the pusher comprises a blade.
12. A system as claimed in any preceding claim wherein the insertion tool comprises a stop for limiting the extent to which the tool may be inserted through an opening.
- 15 13. A system as claimed in claim 12 wherein the stop is adjustably mounted on the insertion tool.
14. A system as claimed in any preceding claim wherein the insertion tool comprises a handle.
- 20 15. A system as claimed in any preceding claim wherein the insertion tool has a wound extending portion with a transverse dimension of from 3 to 35mm.
- 25 16. A system as claimed in claim 15 wherein the transverse dimension of the wound extending portion is from 5 to 12mm.
17. A system as claimed in any preceding claim wherein the wound retractor comprises
- 30 a proximal member for location externally of a wound opening;

the proximal member being movable relative to the retracting member to shorten the axial extent of the retracting member to laterally retract a wound opening.

- 5 18. A system as claimed in claim 17 wherein the proximal member comprises an annular ring means.
- 10 19. A system as claimed in claim 18 wherein the annular ring means comprises an inner ring and an outer ring between which the retracting member may be lead.
- 15 20. A system as claimed in claim 19 wherein one of the rings defines a projection for location in a complimentary recess of the outer ring with the retracting member located therebetween.
- 20 21. A system as claimed in claim 20 wherein the projection is a relatively tight fit in the recess to grip the retracting member therebetween.
- 25 22. A system as claimed in claim 20 or 21 wherein the projection is locatable in the recess in a snap-fit manner.
- 30 23. A system as claimed in any of claims 20 to 22 wherein the inner ring defines the projection and the outer ring defines the recess.
24. A system as claimed in any of claims 20 to 22 wherein the outer ring defines the projection and the inner ring defines the recess.
25. A system as claimed in any of claims 17 to 24 wherein the proximal member comprises one or more valves to facilitate sealed access of an object through the proximal member.

26. A system as claimed in any of claims 17 to 25 wherein the retractor comprises a distal member coupled to a distal end of the retracting member.
- 5 27. A system as claimed in claim 26 wherein the distal member comprises an O-ring.
28. A system as claimed in claim 26 wherein the distal member comprises an annular disc.
- 10 29. A system as claimed in any of claims 26 to 28 wherein the distal member is of a resilient material.
30. A system as claimed in any of claims 17 to 29 wherein the retracting member is flared distally outwardly.
- 15 31. A system as claimed in any of claims 17 to 30 wherein the retractor comprises means to seal a retracted wound opening.
32. A system as claimed in claim 31 wherein the sealing means is provided externally of a wound opening.
- 20 33. A system as claimed in claim 31 or 32 wherein the sealing means is mountable to the proximal member.
- 25 34. A system as claimed in claim 33 wherein the sealing means comprises a cap.
- 30 35. A system as claimed in any of claims 31 to 34 wherein the sealing means comprises a valve to facilitate sealed access of an object through the sealing means.

36. A system as claimed in claim 35 wherein the object comprises an instrument.
- 5 37. A system as claimed in any of claims 17 to 36 wherein the retracting member comprises a sleeve to line a wound opening.
38. A wound retractor system substantially as hereinbefore described with reference to the accompanying drawings.
- 10 39. A method for introducing an element such as an instrument into a body cavity, the method comprising the steps of:-
- making an incision in a body wall, the incision having a length to accommodate the element on retraction of the incision;
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- providing a wound retractor comprising a distal member, a proximal member and a retracting member extending at least between the distal member and the proximal member, the retracting member being axially movable relative to the proximal member;
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- inserting the distal member through the incision such that the retracting member extends through the incision and the proximal member is located outside of the incision;
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- moving the proximal member relative to the retracting member to shorten the axial extent of the retracting member located between the distal member and the proximal member;
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- providing a valve;
- mounting the valve to the reactor;

introducing an element through the valve; and

introducing the element through the retracted incision and into the
body cavity.

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40. A method as claimed in claim 39 wherein the body cavity is an abdominal cavity.

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41. A method as claimed in claim 39 or 40 wherein the length of the incision is from 3 to 35 millimetres.

42. A method as claimed in any of claims 39 to 41 wherein the length of the incision is from 5 to 15 millimetres.

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43. A method as claimed in any of claims 39 to 41 wherein the retracting member comprises a proximal portion located proximally of the proximal member and a distal portion located distally of the proximal member, and the method comprises the step of decoupling the proximal portion from the distal portion after retraction of the wound opening.

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44. A method as claimed in claim 43 wherein the proximal portion is decoupled from the distal portion by a cutting action.

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45. A method as claimed in any of claims 39 to 44 wherein the proximal member comprises an inner ring and an outer ring, and the method comprises the step of fitting the inner ring relative to the outer ring to grip the retracting member therebetween.

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46. A method as claimed in claim 45 wherein the inner ring is snap-fitted relative to the outer ring after retraction of the wound opening.

47. A method as claimed in claim 45 or 46 wherein the inner ring is fitted relative to the outer ring after retraction of the wound opening.
- 5 48. A method as claimed in any of claims 43 to 47 wherein the step of snap-fitting the inner ring relative to the outer ring decouples the proximal portion of the retracting member from the distal portion.
- 10 49. A method as claimed in any of claims 39 to 48 wherein the method comprises the step of mounting the retractor to an insertion tool, and the insertion tool is inserted into the wound opening to insert the retractor into the wound opening.
- 15 50. A method as claimed in claim 49 wherein the incision is made by the insertion tool.
- 20 51. A method as claimed in any of claims 39 to 50 wherein the method comprises the step of sealing the retracted wound opening.
52. A method for retracting an incision comprising the steps of:-
- 25 making an incision in a body wall;
- providing a wound retractor comprising a distal member and a retracting member extending from the distal member;
- 30 providing an insertion tool having a receiver for the retractor;
- mounting the retractor to the receiver of the insertion tool;

inserting the insertion tool with the retractor mounted thereon through the incision;

5 deploying the retractor in the incision; and

 withdrawing the insertion tool from the incision.

10 53. A method as claimed in claim 52 wherein the distal member of the retractor is mounted to the receiver of the insertion tool.

 54. A method of retracting a wound opening substantially as hereinbefore described with reference to the accompanying drawings.

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